

## Safety in the Chemistry Laboratory

Working in the chemistry laboratory is an interesting and rewarding experience. The laboratory is a safe place to work if you are careful. Accidents are caused by carelessness, haste, and disregard of safety rules and practices. Before beginning any lab work, read these rules carefully, learn them, and follow them.

### General

1. Be prepared to work when you arrive at the laboratory. Familiarize yourself with the lab procedures before beginning the lab.
2. Perform only those lab activities assigned by your teacher. Never do anything in the laboratory that is not called for in the laboratory procedure or by your teacher.
3. Work areas should be kept clean and tidy at all times. Only lab materials and notebooks should be brought to the work area.
4. Clothing should be appropriate for working in the lab. Jackets, ties, and other loose garments should be removed. Long sleeves should be rolled up or secured in some manner.
5. Long hair should be tied back or covered, especially in the vicinity of open flame.
6. Jewelry that might present a safety hazard, such as dangling necklaces, chains, medallions, or bracelets should not be worn in the lab.
7. Follow all instructions, both written and oral, carefully.
8. Safety glasses should be worn at all times.
9. Set up apparatus as described in the lab manual or by your teacher. Never use makeshift arrangements.
10. Always use the prescribed instrument (tongs, test tube holder, forceps, etc.) for handling apparatus or equipment.
11. Keep all combustible materials away from open flames.
12. Never touch or taste any substance in the lab unless specifically instructed to do so by your teacher.
13. Never put your face near the mouth of a container that is holding chemicals.
14. When testing for odors, use a wafting motion to direct the odors to your nose.
15. Any activity involving poisonous vapors should be conducted in the fume hood.
16. Dispose of waste materials as instructed by your teacher.
17. Clean up all spills immediately.
18. Clean and wipe dry all work surfaces at the end of class. Wash your hands thoroughly.
19. Know the location of emergency equipment (first aid kit, fire extinguisher, shower, fire blanket, etc.) and how to use them.
20. Report all accidents to the teacher immediately.

### **Handling Chemicals**

21. Read and double check labels on reagent bottles before removing any reagent. Take only as much reagent as you need.
22. Do not return unused reagent to stock bottles.
23. When transferring chemical reagents from one container to another, hold the containers out away from your body.
24. When mixing an acid and water, always add the acid to the water.
25. Avoid touching chemicals with your hands. If chemicals do come in contact with your hands, wash them immediately.

### **Handling Glassware**

26. Glass tubing, especially long pieces, should be carried in a vertical position to minimize the likelihood of breakage and to avoid stabbing anyone.
27. Never handle broken glass with your bare hands. Use a brush and dustpan to clean up broken glass. Dispose of the glass as directed by your teacher.
28. Always lubricate glassware (tubing, thistle tubes, thermometers, etc.) with water or glycerine before attempting to insert it in a stopper.
29. Never apply force when inserting or removing glassware from a stopper. Use a twisting motion. If a piece of glassware becomes “frozen” In a stopper, take it to your teacher.
30. Do not place hot glassware directly on the lab table. Always use an insulating pad or tile of some sort.
31. Allow plenty of time for hot glass to cool before touching it. Hot glass can cause painful burns. (Remember: Hot glass looks cool.)

### **Heating Substances**

32. Exercise extreme caution when using a gas burner. Keep your head and clothing away from the flame.
33. Always turn the burner off when it is not in use.
34. Do not bring any substance into contact with a flame unless instructed to do so.
35. Never heat anything without being instructed to do so.
36. Never look into a container that is being heated.
37. When heating a substance in a test tube, make sure that the mouth of the tube is not pointed at yourself or anyone else.
38. Never leave unattended anything that is being heated or is visibly reacting.